



PATENT APPLICATION

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re application of

Docket No: Q65831

Fusasuke GOTOH, et al.

Appln. No.: 09/925,020

Group Art Unit: 3683

Confirmation No.: 2484

Examiner: Devon C. KRAMER

Filed: August 09, 2001

For: ROLLING BEARING

**SUBMISSION OF APPEAL BRIEF**

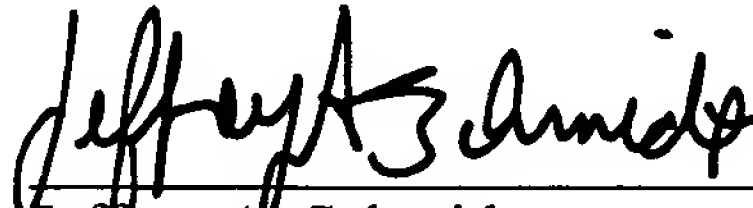
**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Submitted herewith please find an Appeal Brief. A check for the statutory fee of \$500.00 is attached. The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

Respectfully submitted,

  
Jeffrey A. Schmidt  
Registration No. 41,574

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

Date: March 6, 2006



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**APPEAL BRIEF UNDER 37 C.F.R. § 41.37**

**MAIL STOP APPEAL BRIEF - PATENTS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the provisions of 37 C.F.R. § 41.37, Appellants submit the following:

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**I. REAL PARTY IN INTEREST**

The real party in interest is the Assignee, NSK Ltd., by virtue of an assignment recorded on November 19, 2001 at Reel 012311, Frame 0645.

## **II. RELATED APPEALS AND INTERFERENCES**

There are no other appeals, judicial proceedings or interferences known to the Appellant, Appellants' legal representative, or the Assignee, which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

### **III. STATUS OF CLAIMS**

Claims 1-18 are pending, have been rejected, and are the subject of this appeal.

#### **IV. STATUS OF AMENDMENTS**

On December 7, 2005, after the Final Office Action mailed on June 10, 2005, Appellants filed a Request for Reconsideration Under 37 C.F.R. § 1.116, but no claims were amended. Accordingly, the claims stand as presented before the Final Office Action of June 10, 2005.

## V. SUMMARY OF THE CLAIMED SUBJECT MATTER

In general, the present invention is directed to a rolling bearing disposed in a mechanism wherein inner and outer rings at least sometimes rotate with no relative rotation between them, as for example when held together by a clutch. The rings are subject to a rotational load, yet the present rolling bearing can prevent occurrence of fretting in the bearing raceway surfaces to thereby enhance the life of the bearing.<sup>1</sup>

In the prior art, in a clutch-on state as shown in Fig. 2, the outer and inner rings 2, 3 are rotated via rotary body 6 (such as a pulley) so that there is no relative rotation between the rings 2, 3. In this clutch-on state, the radial load acting on the bearings is shown by arrow marks A-E in Figs. 7(a)-(e). Because of rotation of the rotary body 6, the load is moved about the outer and inner rings 2, 3, sometimes the rolling body 4 is situated directly below the radial rotation load direction. In such a situation, as shown by solid lines in Figs. 8 (a) and (b), a contact area S1 between the rolling body 4 and the raceway surface 3a increases. On the other hand, when the rolling body 4 is situated on a side opposite to that on which the rotation load acts, the load acting on the rolling body decreases. In this situation, as shown by broken lines in Figs. 8(a) and (b), a contact area S2 between the rolling body 4 and the raceway surface 3a decreases.<sup>2</sup>

The above-described variations in load acting on the rolling body cause slight slippage between the mutual contact surfaces of the raceway surface 3a and rolling body 4. Thus, when the rolling body 4 is disposed at the same position and is subject to such repeated load cycles, there occurs fretting which gives rise to local wear on the raceway surface 3a. This local wear causes strange sounds and reduces the life of the bearing. Or, due to worn powder produced by the local wear, the life of the grease can be shortened, thus shortening the life of the bearing.<sup>3</sup>

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<sup>1</sup> Specification at paragraph [0001].

<sup>2</sup> Specification at paragraph [0007]

<sup>3</sup> Specification at paragraph [0008]

The present invention is directed to the above-mentioned problems found in the conventional rolling bearings in a mechanism wherein the inner and outer rings of a bearing at least sometimes are rotated together without any relative rotation between them. Accordingly, concepts of the present invention aim at preventing the above-described fretting inexpensively and positively, such that there is a decrease in strange sounds and an increase in the life of the bearing.<sup>4</sup> In attaining the above and other objects, according to claim 1 there is provided a rolling bearing apparatus comprising:<sup>5</sup>

a roller bearing including

a plurality of rolling elements 4 held between an inner ring 3 and an outer ring 2 by a retainer 10 (see Fig. 9), and

grease (see proposed amendment to Fig. 9) sealed in said rolling bearing by a seal 20 (see Fig. 9);

a rotary body 6 provided with said outer ring 2; and

a shaft 8 provided with said inner ring 3,

wherein said rolling bearing apparatus is configured such that said rotary body 6 and said shaft 8 are connected together by a clutch mechanism 12,

when said rotary body 6 and said shaft 8 are connected, said rolling bearing can be used on receiving a rotation load, while the relative rotation between said inner and outer rings is zero (see Fig. 2, clutch-on state), and

wherein an initial radial clearance between said inner and outer rings is set such that a bearing effective clearance when said rolling bearing is incorporated between said rotary body and said shaft can provide a positive value.

That is, the initial radial clearance between the inner and outer rings (i.e., in an unloaded state) is set such that a bearing effective clearance (i.e., with the bearing in the loaded state) is a

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<sup>4</sup> Specification at paragraph [0010]

<sup>5</sup> See Figs. 1 and 2.



positive value. See, for example, paragraphs [0011] - [0016]. Due to the positive value of the bearing effective clearance (when the bearing is in a loaded state due to load on rotary body 6), the rolling elements 4 will shift in a counterclockwise direction (as directions are shown in Fig. 3) when the inner 3 and outer 2 rings do not rotate relative to one another but are rotated together. See, for example, Fig. 4: bearing clearance of 0.02 mm at rotational speeds from around 500 rpm to around 5000 rpm; bearing effective clearance of 0.04 mm from speeds around 500 rpm to around 5000 rpm; and bearing effective clearance of 0.06 mm at any rotational speed. Due to the shifting of the rolling elements 4, they do not collide with the raceways in the same spot, thus preventing fretting. See, also, the specification at paragraphs [0023] - [0043] and [0051].

Claim 17 more specifically provides that the positive value of the radial clearance is set such that the contact position of the rolling element with respect to the raceway surface of the inner ring is gradually shifted when the relative rotation between inner and outer rings is zero. As shown in Fig. 4, a bearing effective clearance of 0.01 mm (as is the case in Takano, which is relied upon by the Examiner) fails to produce any shift in the retainer (rolling elements) at any rotational speed. On the other hand, a bearing effective clearance of 0.02 mm produces a slow shift in the retainer (rolling elements) at rotational speeds around 500 rpm and around 5000 rpm. Further, for example, a bearing effective clearance of 0.04 mm produces a slow shifting of the retainer (rolling elements) at rotational speeds around 500 rpm.

**VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

- 1) Claims 1, 9, 17, and 18, are rejected under 35 U.S.C. § 103(a) as being unpatentable over JP-1122753 (Tanaka) in view of JP-2000-119673 (Iso et al.) and U.S. Patent No. 5, 655,844 (Takano).
- 2) Claims 2 and 10 are rejected under §103(a) as being unpatentable over Tanaka in view of Iso and Takano, and further in view of US Patent 4,371,220 to Brucher (hereinafter Brucher).
- 3) Claims 3 and 11 under §103(a) as being unpatentable over Tanaka in view of Iso and Takano, and further in view of US Patent 4,629,337 to Teramachi (hereinafter Teramachi).
- 4) Claims 4 and 12 under §103(a) as being unpatentable over Tanaka in view of Iso and Takano, and further in view of Brucher and Teramachi.
- 5) Claims 5 and 13 under §103(a) as being unpatentable over Tanaka in view of Iso and Takano, and further in view of US Patent 4,650,195 to Dreschmann et al. (hereinafter Dreschmann).
- 6) Claims 6 and 14 under §103(a) as being unpatentable over Tanaka in view of Iso and Takano, and further in view of Brucher and Dreschmann.
- 7) Claims 7 and 15 under §103(a) as being unpatentable over Tanaka in view of Iso and Takano, and further in view of Teramachi and Dreschmann.
- 8) Claims 8 and 16 under §103(a) as being unpatentable over Tanaka in view of Iso and Takano, and further in view of Brucher, Teramachi, and Dreschmann.

## VII. ARGUMENT

1) The Examiner rejected claims 1, 9, 17, and 18, under 35 U.S.C. § 103(a) as being unpatentable over JP-1122753 (Tanaka) in view of JP-2000-119673 (Iso et al.) and U.S. Patent No. 5,655,844 (Takano). Appellants traverse this rejection because there is no permissible motivation for combining the references as suggested by the Examiner, and the Examiner's interpretation of Takano is mistaken.

### Claims 1, 9, 17, and 18

There is no proper motivation for combining the references as suggested by the Examiner. Instead, the Examiner picks and chooses elements from the prior art, using the claims as a guide, in an attempt to reconstruct Appellants invention. This, he cannot do. After all, “[i]t is impermissible to use the claimed invention as an instruction manual or ‘template’ to piece together the teachings of the prior art so that the claimed invention is rendered obvious.” *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ.2d 1780, 1784 (Fed. Cir. 1992)(citing *In re Gorman*, 933 F.2d 982, 987, 18 USPQ.2d 1885, 1888 (Fed. Cir. 1991) ). Further, it is not obvious to selectively pick and choose elements or concepts from the various references so as to arrive at the claimed invention by using the claims as a guide. *Ex Parte Clapp*, 227 USPQ 972 (Bd. Pat. App. & Interf. 1985).

Here, the Examiner selectively picks Tanaka's clutch, Iso's grease, and Takano's bearing clearance, i.e., disparate elements from the prior art, in an attempt to arrive at the claimed invention which is directed to specific structure for solving a specific problem in bearing rings that sometimes rotate under the condition that they are held together without relative rotation there between as, for example, by a clutch.

Claim 1 sets forth a rolling bearing apparatus comprising: a rolling bearing including a plurality of rolling elements held between an inner ring and an outer ring; wherein the rolling bearing apparatus is configured so that a rotary body and a shaft are connected together by a clutch mechanism; when the rotary body and the shaft are connected, the rolling bearing can be

used on receiving a rotation load, while a relative rotation between the inner ring and the outer ring is zero, wherein an initial radial clearance between the inner and outer rings is set such that a bearing effective clearance when the rolling bearing is incorporated between the rotary body and the shaft can provide a positive value.

The provision of a positive radial bearing effective clearance allows the rolling elements to move even when the inner and outer rings do not move relative to one another, but are rotated together as when connected together by, for example, a clutch mechanism. For example, as shown in Figs. 3(a) to 3(e), the rolling elements 4 (as indicated by the position of black rolling element 4) will move in a counter-clockwise direction as the races 3a and 2a of the inner 3 and outer 2 rings together are rotated in the clock-wise direction without relative rotation therebetween. This movement is caused by the positive effective clearance and the fact that the outer ring 2a is acted on by a force (A) due to the belt driving the rotary body 6. Further, an advantage of such movement of the rolling elements is that they are then not compressed at the same portion of the inner and outer races, thereby preventing fretting damage to the races.

The Examiner acknowledges that Tanaka fails to teach or suggest a grease lubricant, and an initial radial clearance between the inner and outer rings is set such that there is a positive bearing effective clearance when the rolling bearing is incorporated between a rotary body and a shaft.<sup>6</sup>

In order to make up for these deficiencies, the Examiner selectively picks Iso for teaching a grease lubricant<sup>7</sup>, and selectively picks Takano for teaching the use of an initial radial clearance between inner and outer rings.<sup>8</sup>

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<sup>6</sup> June 10 Final Office Action at page 2, item 2, 2<sup>nd</sup> paragraph.

<sup>7</sup> June 10 Final Office Action at page 3, lines 4-9.

<sup>8</sup> June 10 Final Office Action at page 3, lines 10-13.

But the Examiner's attempted reliance on Takano is misplaced because Takano is non-analogous art. Specifically, Takano is neither: (i) directed to the same field of endeavor as are Appellants and Tanaka; nor (ii) at all pertinent to the problem solved by Appellants.<sup>2</sup> The two step test for analogous art is not met in the present case.

(i) Takano is not directed to the same field of endeavor as are Appellants and Tanaka.

Appellants and Tanaka are directed to the field of rotary elements that may be held together by clutches, and in particular to devices in which inner and outer bearing rings at least sometimes rotate together without any relative rotation between them. On the other hand, Takano is directed to the field of industrial machinery, and in particular screw extruders. Although both fields of endeavor utilize rolling bearings, the considerations for each are very much different. That is, in the field of rotary elements with clutches, the inner and outer rings of a bearing unit do not rotate relative to one another when the clutch is in its locked-up, or clutch-on, state. On the other hand, in the field of industrial machinery (and in particular screw extruders) the inner and outer rings of a bearing unit will not rotate together such that there is no relative movement between them. Further, in the field of rotary elements with clutches, there is no significant axial load, whereas there is with screw extruders. Thus, in a mechanism having rotary elements and a clutch, there is no need for the bearing unit to support an axial load, whereas in the field of screw extruders, the bearing unit must support an axial load acting against the turns of the screw portion of the extruder.

In light of the foregoing, Takano's screw extruder bearing unit is not in the same field of endeavor as are Appellants and Tanaka's rotary elements having bearing and clutch mechanisms.

(ii) Takano is not related to solving the same problem as Appellants have solved.

Takano does not teach or suggest the structure of the present invention, but instead describes: (a) that a "clearance of rolling bearing is set to be a positive value", in a bearing where

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<sup>2</sup> See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). See also *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986). See, also, MPEP §2141.01(a).

one ring rotates relative to the other ring; and (b) “the life time of the rolling bearing is extended”, when such a bearing clearance is disposed in a bearing receiving an axial load.

However, Takano does not teach or suggest that there is solved the problem of wear in a rolling bearing used on the condition that the rolling bearing receives a rotation load, while a relative rotation between the inner ring and the outer ring is zero, as is the situation in a mechanism having a clutch; i.e., the problem solved by the present invention.

Further, neither Tanaka nor Appellants have the problem of decreased bearing life due to axial load, because there is no significant axial load in either Appellants’ or Tanaka’s mechanism having a clutch.

In light of the above, one of ordinary skill in the art—looking at the teachings of the references as a whole—would not have been motivated to provide Takano’s clearance (in a bearing having relatively rotating rings and axial load) in the bearings of Tanaka’s rotating mechanism having a clutch (wherein at lock-up, or clutch-on, there is no relative rotation, and even during relative rotation there is no significant axial load).

Lastly, the Examiner cites Iso as teaching the use of grease as a lubricant. But Iso does not teach or suggest anything that would cure the above-noted deficiencies in the Examiner’s attempted combination of references. Accordingly, there is no proper motivation for the Examiner’s attempted combination of Tanaka, Takano, and Iso. Therefore, this rejection is in error and Appellants respectfully request that it be reversed.

#### Claims 17 and 18

In addition to that set forth above, with respect to claims 17 and 18 the references fail to teach or suggest all of the elements as set forth in the claims because, for at least the following two reasons, the Examiner’s interpretation of Takano is mistaken:

(i) Takano does not teach or suggest a gap wherein the contact area between the raceway surface and the inner ring would “inherently” shift as asserted by the Examiner.<sup>10</sup> Instead,

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<sup>10</sup> June 10, 2005 Office Action at page 3, lines 17-20.

Takano discloses that the axial gap in the ball bearing is “set at 0.010 mm”.<sup>11</sup> As can be seen from Appellants’ Fig. 4, a gap of 0.01 mm does not provide any shift of the retainer (rolling element) and, therefore, there would be no shift in the contact area.

In contrast, as set forth in claims 17 and 18, the positive value of the radial clearance is set such that the contact position of the rolling element with respect to the raceway surface of the inner ring shifts/is shiftable when the relative rotation between inner and outer rings is zero. With reference to Fig. 4, the effective clearance must be greater than 0.01 in order to achieve such a shifting as set forth in the claims.

In light of the above, even assuming that one of ordinary skill in the art were motivated to combine the references as suggested by the Examiner, any such combination would have a bearing gap of 0.01 mm and, therefore, would not provide any shift in the contact position as set forth in Appellants’ claims 17 and 18.

(ii) The Examiner’s “Response to Arguments”, including his interpretation of Takano therein, is mistaken.<sup>12</sup> The Examiner asserts that Takano discloses—in col. 2, lines 25-35—that the contact position of the rolling element with respect to the raceway surface of the inner ring is shiftable.<sup>13</sup> However, the cited portion of Takano merely relates to “... the contact pressure on the rolling faces of the balls and on the inner and outer raceways of the respective ball bearings is smaller than that for the case of a preload applied, ...” This recitation has nothing to do with whether a contact area is shiftable as claimed.

For at least any of the forgoing reasons, this rejection is in error and should be reversed.

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<sup>11</sup> Takano at col. 7, lines 35-42.

<sup>12</sup> June 10 Office Action at page 11.

<sup>13</sup> June 10 Office Action at page 11, 2<sup>nd</sup> paragraph.



2) The Examiner rejected claims 2 and 10 under §103(a) as being unpatentable over Tanaka in view of Iso and Takano, and further in view of US Patent 4,371,220 to Brucher (hereinafter Brucher). Appellants respectfully traverse this rejection for the following reasons.

As noted previously, the Examiner's attempted combination of Tanaka, Iso, and Takano, is improper and is deficient. Brucher does not teach anything that would make the Examiner's attempted combination proper or sufficient. Accordingly, this rejection is believed to be in error and should be reversed.

3) The Examiner rejected claims 3 and 11 under §103(a) as being unpatentable over Tanaka in view of Iso and Takano, and further in view of US Patent 4,629,337 to Teramachi (hereinafter Teramachi). Appellants respectfully traverse this rejection for the following reasons.

As noted previously, the Examiner's attempted combination of Tanaka, Iso, and Takano, is improper and deficient. Teramachi does not teach anything that would make the Examiner's attempted combination proper or sufficient. Accordingly, this rejection is believed to be in error and should be reversed.

4) The Examiner rejected claims 4 and 12 under §103(a) as being unpatentable over Tanaka in view of Iso and Takano, and further in view of Brucher and Teramachi. Appellants respectfully traverse this rejection for the following reasons.

As noted previously, the Examiner's attempted combination of Tanaka, Iso, and Takano, is improper and is deficient. Brucher and Teramachi do not teach anything that would make the Examiner's attempted combination proper or sufficient. Accordingly, this rejection is believed to be in error and should be reversed.

5) The Examiner rejected claims 5 and 13 under §103(a) as being unpatentable over Tanaka in view of Iso and Takano, and further in view of US Patent 4,465,195 to Dreschmann et al. (hereinafter Dreschmann). Appellants respectfully traverse this rejection for the following reasons.



As noted previously, the Examiner's attempted combination of Tanaka, Iso, and Takano, is improper and is deficient. Dreschmann does not teach anything that would make the Examiner's attempted combination proper or sufficient. Accordingly, this rejection is believed to be in error and should be reversed.

6) The Examiner rejected claims 6 and 14 under §103(a) as being unpatentable over Tanaka in view of Iso and Takano, and further in view of Brucher and Dreschmann. Appellants respectfully traverse this rejection for the following reasons.

As noted previously, the Examiner's attempted combination of Tanaka, Iso, and Takano, is improper and is deficient. Brucher and Dreschmann do not teach anything that would make the Examiner's attempted combination proper or sufficient. Accordingly, this rejection is believed to be in error and should be reversed.

7) The Examiner rejected claims 7 and 15 under §103(a) as being unpatentable over Tanaka in view of Iso and Takano, and further in view of Teramachi and Dreschmann. Appellants respectfully traverse this rejection for the following reasons.

As noted previously, the Examiner's attempted combination of Tanaka, Iso, and Takano, is improper and is deficient. Teramachi and Dreschmann do not teach anything that would make the Examiner's attempted combination proper or sufficient. Accordingly, this rejection is believed to be in error and should be reversed.

8) The Examiner rejected claims 8 and 16 under §103(a) as being unpatentable over Tanaka in view of Iso and Takano, and further in view of Brucher, Teramachi, and Dreschmann. Appellants respectfully traverse this rejection for the following reasons.

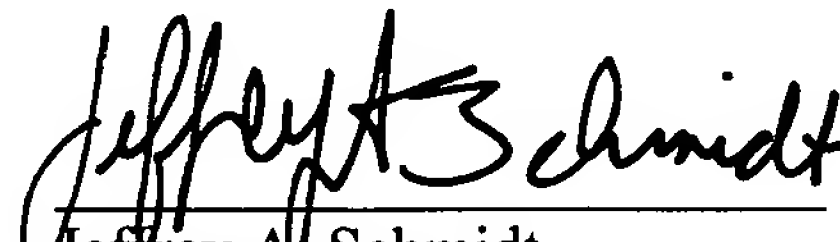
As noted previously, the Examiner's attempted combination of Tanaka, Iso, and Takano, is improper and is deficient. Brucher, Teramachi and Dreschmann do not teach anything that would make the Examiner's attempted combination proper or sufficient. Accordingly, this rejection is believed to be in error and should be reversed.

**Conclusion**

Unless a check is submitted herewith for the fee required under 37 C.F.R. §41.37(a) and 1.17(c), please charge said fee to Deposit Account No. 19-4880.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
Jeffrey A. Schmidt  
Registration No. 41,574

SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON OFFICE

**23373**

CUSTOMER NUMBER

Date: March 6, 2006

## CLAIMS APPENDIX

### **Claims 1-18 on Appeal:**

1. A rolling bearing apparatus comprising:  
a roller bearing including  
a plurality of rolling elements held between an inner ring and an outer ring by a retainer, and  
grease sealed in said rolling bearing by a seal;  
a rotary body provided with said outer ring; and  
a shaft provided with said inner ring,  
wherein said rolling bearing apparatus is configured such that said rotary body and said shaft  
are connected together by a clutch mechanism,  
when said rotary body and said shaft are connected, said rolling bearing can be used on  
receiving a rotation load, while the relative rotation between said inner and outer rings is zero, and  
wherein an initial radial clearance between said inner and outer rings is set such that a  
bearing effective clearance when said rolling bearing is incorporated between said rotary body and  
said shaft can provide a positive value.
2. A rolling bearing as set forth in Claim 1, wherein said bearing effective clearance is set at  
0.020 mm or more.
3. A rolling bearing as set forth in Claim 1, wherein the depths of grooves formed in said  
inner and outer rings are respectively 17% or more of the diameter of one of said rolling elements.
4. A rolling bearing as set forth in Claim 2, wherein the depths of grooves formed in said  
inner and outer rings are respectively 17% or more of the diameter of one of said rolling elements.
5. A rolling bearing as set forth in Claim 1, wherein an interference of a seal lip of said seal  
is 60% or more of an axial clearance.

6. A rolling bearing as set forth in Claim 2, wherein an interference of a seal lip of said seal is 60% or more of an axial clearance.

7. A rolling bearing as set forth in Claim 3, wherein an interference of a seal lip of said seal is 60% or more of an axial clearance.

8. A rolling bearing as set forth in Claim 4, wherein an interference of a seal lip of said seal is 60% or more of an axial clearance.

9. A rolling bearing as set forth in Claim 1, wherein the dynamic viscosity at 40° C of a base oil of said grease is 80 mm<sup>2</sup>/s or more.

10. A rolling bearing as set forth in Claim 2, wherein the dynamic viscosity at 40° C of a base oil of said grease is 80 mm<sup>2</sup>/s or more.

11. A rolling bearing as set forth in Claim 3, wherein the dynamic viscosity at 40° C of a base oil of said grease is 80 mm<sup>2</sup>/s or more.

12. A rolling bearing as set forth in Claim 4, wherein the dynamic viscosity at 40° C of a base oil of said grease is 80 mm<sup>2</sup>/s or more.

13. A rolling bearing as set forth in Claim 5, wherein the dynamic viscosity at 40° C of a base oil of said grease is 80 mm<sup>2</sup>/s or more.

14. A rolling bearing as set forth in Claim 6, wherein the dynamic viscosity at 40° C of a base oil of said grease is 80 mm<sup>2</sup>/s or more.

15. A rolling bearing as set forth in Claim 7, wherein the dynamic viscosity at 40° C of a base oil of said grease is 80 mm<sup>2</sup>/s or more.

16. A rolling bearing as set forth in Claim 8, wherein the dynamic viscosity at 40° C of a base oil of said grease is 80 mm<sup>2</sup>/s or more.

17. A rolling bearing as set forth in Claim 1, wherein the positive value of the radial clearance is set such that the contact position of the rolling element with respect to the raceway surface of the inner ring is gradually shifted when the relative rotation between inner and outer rings is zero.

18. A rolling bearing as set forth in claim 1, wherein the positive value of the radial clearance is set such that the contact position of the rolling element with respect to the raceway surface of the inner ring is shiftable in a circumferential direction when the relative rotation between inner and outer rings is zero.

**EVIDENCE APPENDIX:**

Pursuant to 37 C.F.R. § 41.37(c)(1)(ix), there is **no** evidence submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 or any other evidence entered by the Examiner and relied upon by Appellant in the appeal.

**RELATED PROCEEDINGS APPENDIX**

There are **no** decisions rendered by a court or the Board in any proceeding identified about in Section II pursuant to 37 C.F.R. § 41.37(c)(1)(ii).